

# **Computer Network Lab**



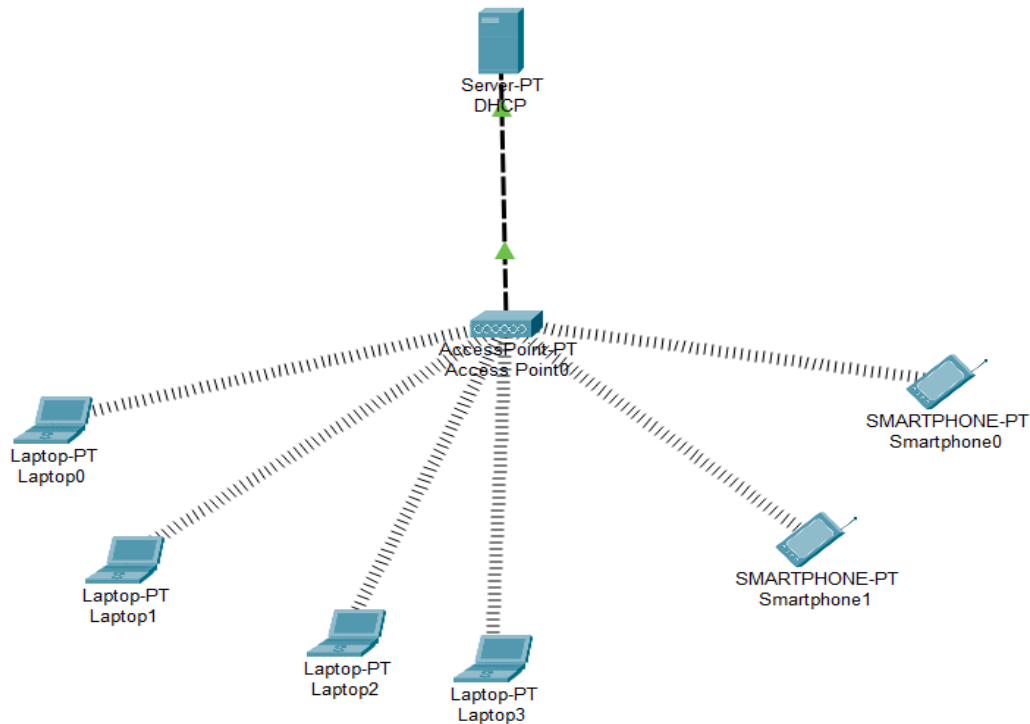
## **LAB WORK # 08**

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**FAST NATIONAL UNIVERSITY OF COMPUTER**  
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## Task 1: WLAN Configuration on Packet Tracer



After DHCP Services configuration on DHCP Server, we will configure one more thing on this DHCP Server. This is the IP address and subnet mask of the Server. Here, our Server IP address will be 192.168.1.1 and the mask will be 255.255.255.0.

The screenshot shows the 'DHCP' configuration window with the 'Services' tab selected. The 'DHCP' service is enabled for the 'FastEthernet0' interface. The configuration details are as follows:

Interface	Service
FastEthernet0	On

Configuration parameters:

- Pool Name: serverPool
- Default Gateway: 192.168.1.1
- DNS Server: 0.0.0.0
- Start IP Address: 192.168.1.11
- Subnet Mask: 255.255.255.0
- Maximum Number of Users: 240
- TFTP Server: 0.0.0.0
- WLC Address: 0.0.0.0

Buttons: Add, Save, Remove

Pool Name	Default Gateway	DNS Server	Start IP Address	Subnet Mask	Max User	TFTP Server	WLC Address
serverPool	192.168.1.1	0.0.0.0	192.168.1.11	255.255.255.0	240	0.0.0.0	0.0.0.0

DHCP

PhysicalConfigServicesDesktopProgrammingAttributes

GLOBAL

Settings

Algorithm Settings

INTERFACE

FastEthernet0

Global Settings

Display Name DHCP

Gateway/DNS IPv4

DHCP

Static

Default Gateway 192.168.1.1

DNS Server

Gateway/DNS IPv6

Automatic

Static

Default Gateway

DNS Server

DHCP

PhysicalConfigServicesDesktopProgrammingAttributes

GLOBAL

Settings

Algorithm Settings

INTERFACE

FastEthernet0

FastEthernet0

Port Status

Bandwidth

Duplex

MAC Address 0001.42EC.BA2B

IP Configuration

DHCP

Static

IPv4 Address 192.168.1.5

Subnet Mask 255.255.255.0

IPv6 Configuration

Automatic

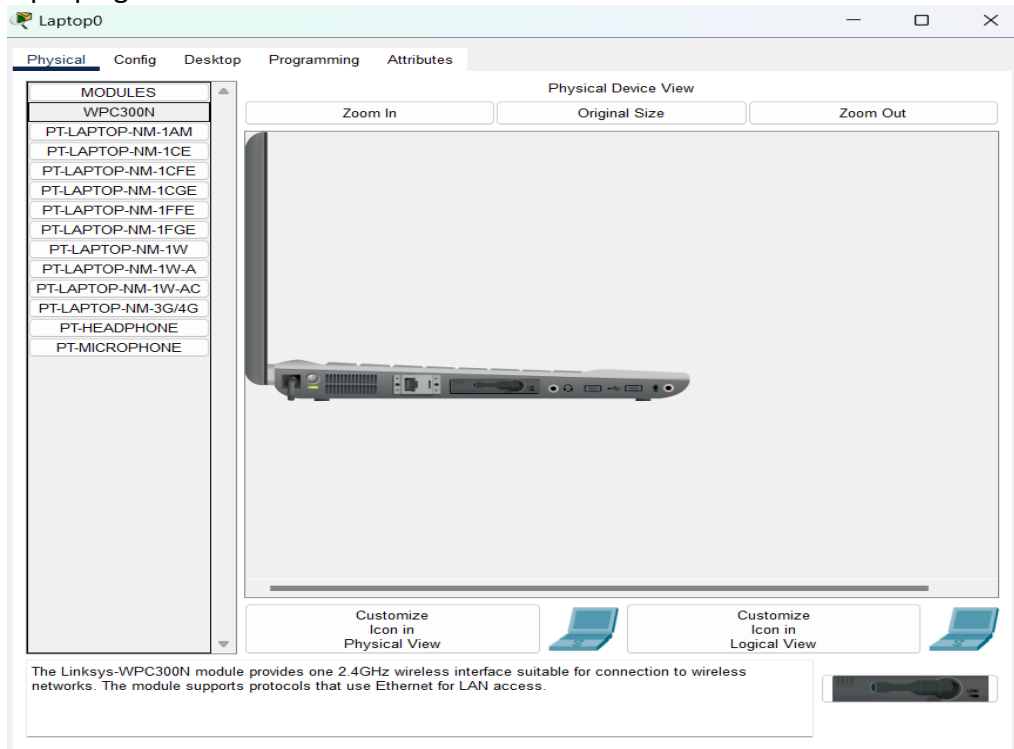
Static

IPv6 Address /

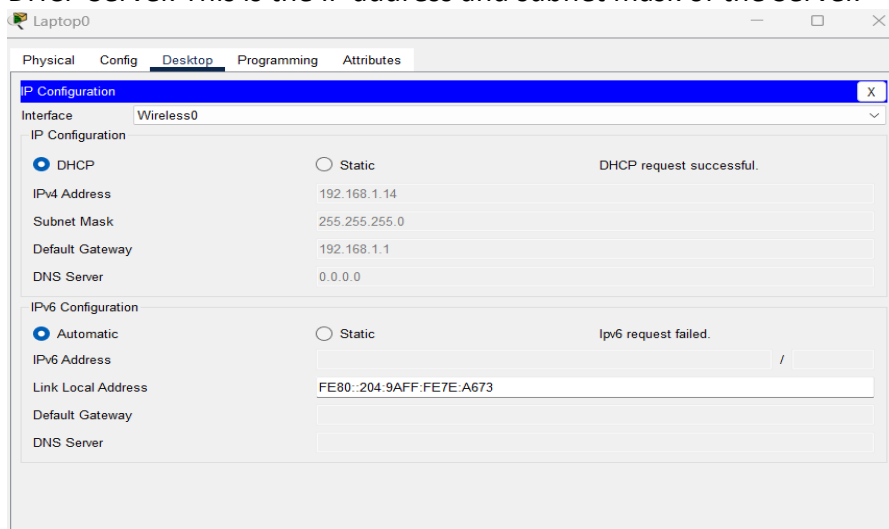
Link Local Address: FE80::201:42FF:FEEC:BA2B

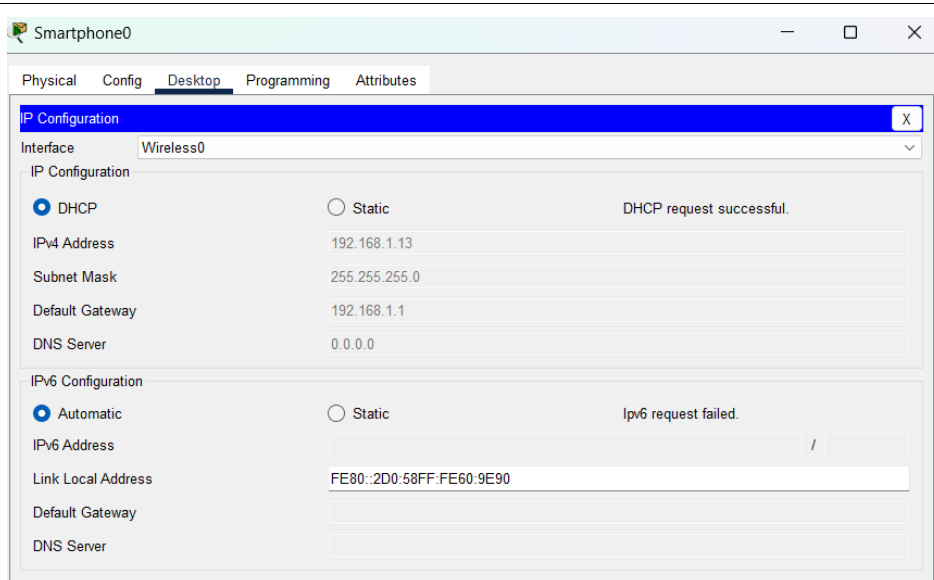
### Place Wireless Interface Card to Laptops:

By default laptops has classic Ethernet card. To involve in a wireless network, we should have wireless interface card. So, in each laptop, we should turn off the laptop, remove the classical Ethernet, instead of it we place Wireless Interface Card (WPC300N). Then, we power on the laptop again.



After DHCP Services configuration on DHCP Server, we will configure one more thing on this DHCP Server. This is the IP address and subnet mask of the Server.

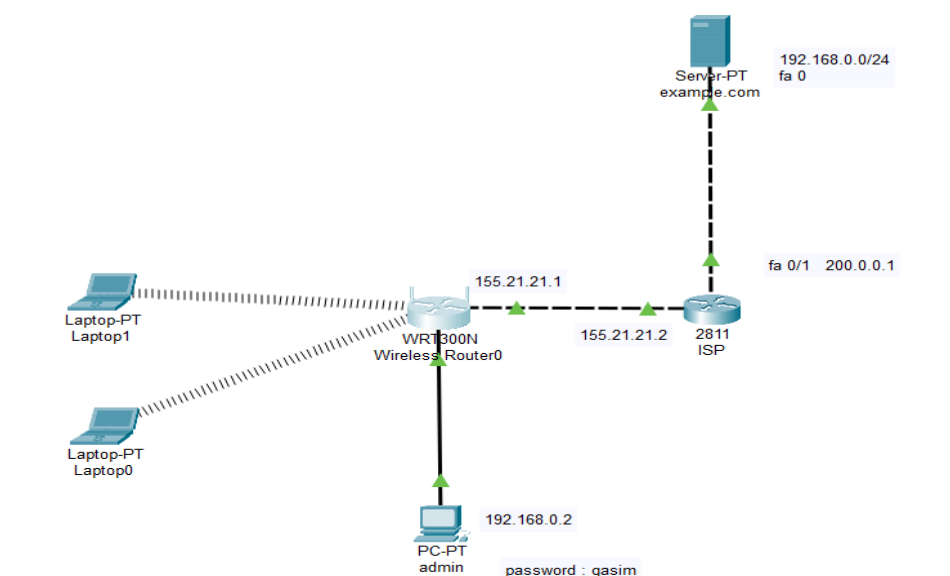




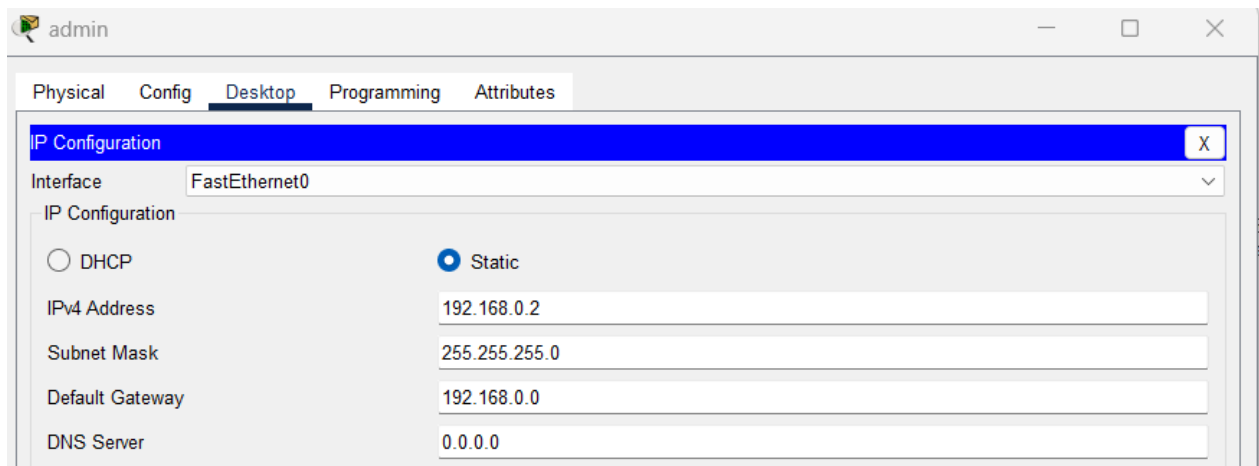
## Task 2: Wireless Router configuration in Cisco Packet Tracer

We'll go through wireless LAN configuration, wireless security and configuring the wireless router for internet connectivity. Briefly, here are the configurations we'll perform on the wireless router:

- Wireless LAN administration.
- Wireless LAN network setup.
- Securing a wireless network with WPA and WEP security features.
- Setting up internet connectivity on the wireless router.

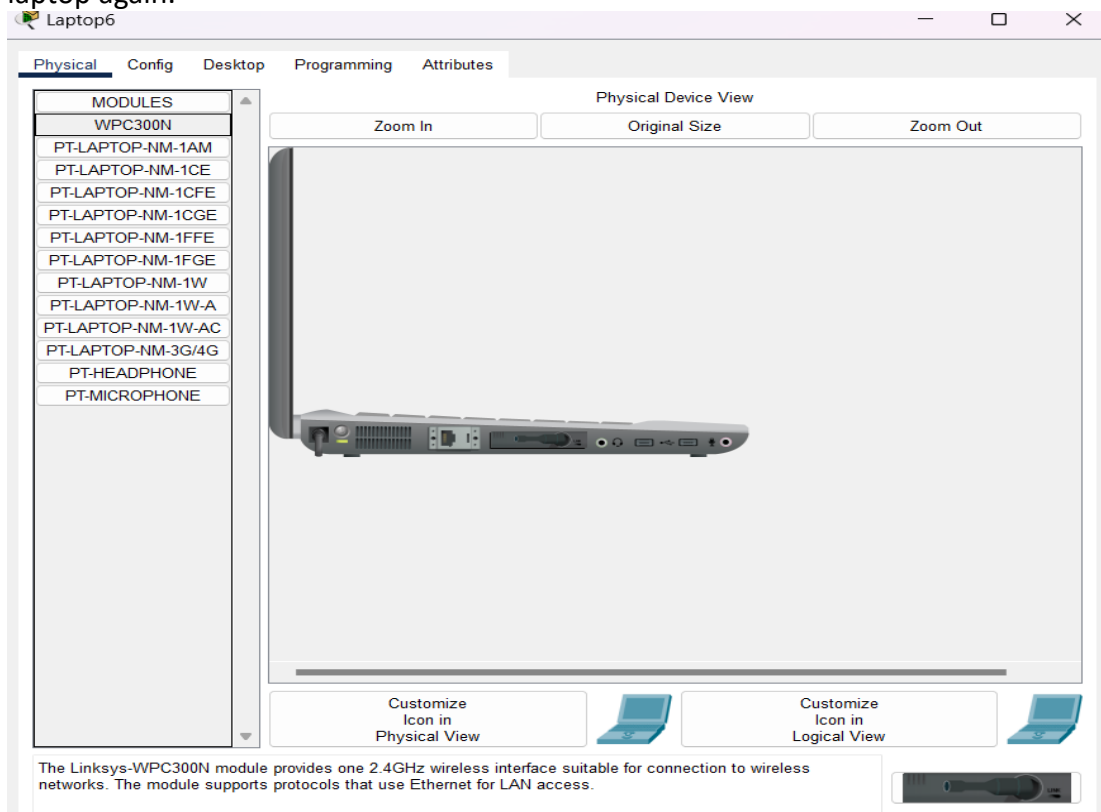


Give Ip in Admin :



### Place Wireless Interface Card to Laptops:

By default laptops has classic Ethernet card. To involve in a wireless network, we should have wireless interface card. So, in each laptop, we should turn off the laptop, remove the classical Ethernet, instead of it we place Wireless Interface Card (WPC300N). Then, we power on the laptop again.



Change the password in GUI:

A login prompt appears. Provide the username (admin) and password (admin) to be allowed into the GUI of the router. You can always change these settings later.

Click on the Administration tab and set a new password for administrative access. Scroll down and Save settings. You will be prompted for a username and the new password you just set. Type them and click OK. Wait a bit. A new screen appears confirming settings are successful. You can click on continue to continue with configurations.

The screenshot shows the 'Administration' tab of a router's web interface. The left sidebar has 'Management' selected. The main area contains fields for 'Router Password' and 'Re-enter to confirm', both masked with dots. Below these are sections for 'Web Access' and 'Remote Access'. In 'Web Access', 'Web Utility Access' is set to HTTP (checked) and 'Web Utility Access via Wireless' is set to Enabled. In 'Remote Access', 'Remote Management' is set to Disabled, and 'Web Utility Access' is set to HTTP. At the bottom, there are fields for 'Remote Upgrade' (Disabled) and 'Allowed Remote Ip Address'.

After they change the password and save its :

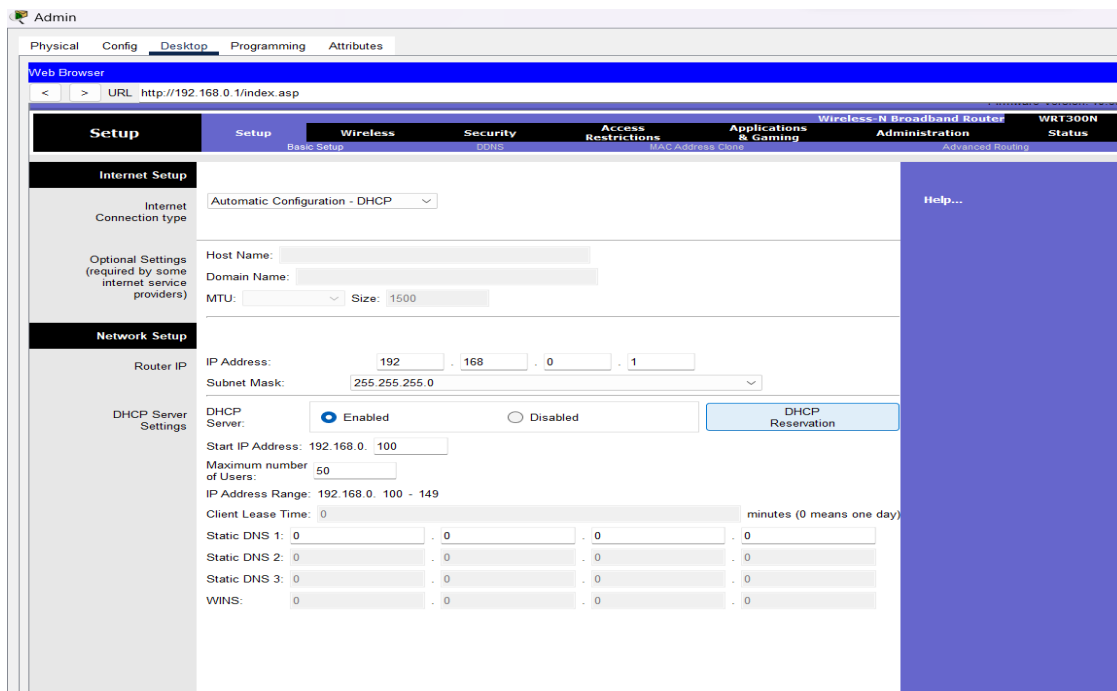
The screenshot shows the confirmation screen after saving settings. The URL in the browser is 'http://192.168.0.1/apply.cgi'. The message 'Settings are successful.' is displayed in a large font, with a blue 'Continue' link below it.

## Pool create go to setup:

### Network setup : Wireless Router Administration

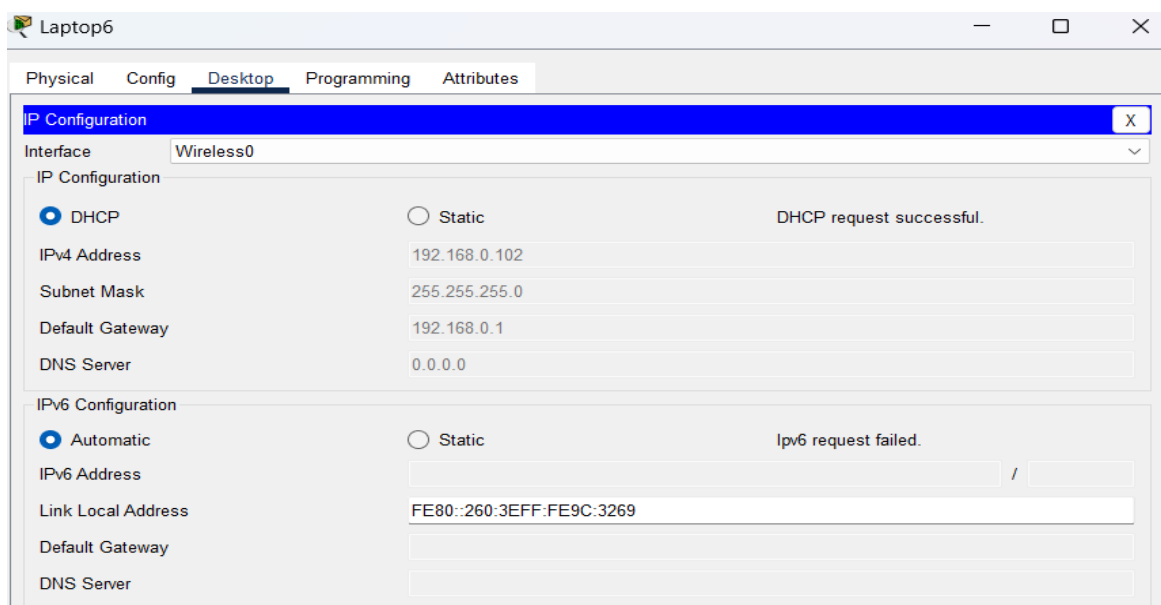
We'll begin with Administration in the GUI. Here we'll simply change the router's username and password.

On the browser of Admin PC, type the IP address of the LAN interface of the wireless router(192.168.0.1, by default). Hit Go to access the GUI of the router. Provide the default username(admin) and password(admin). Click OK. You're now on the GUI of the router. See it on the figure below.



### The laptop DHCP network :

#### Laptop 6:








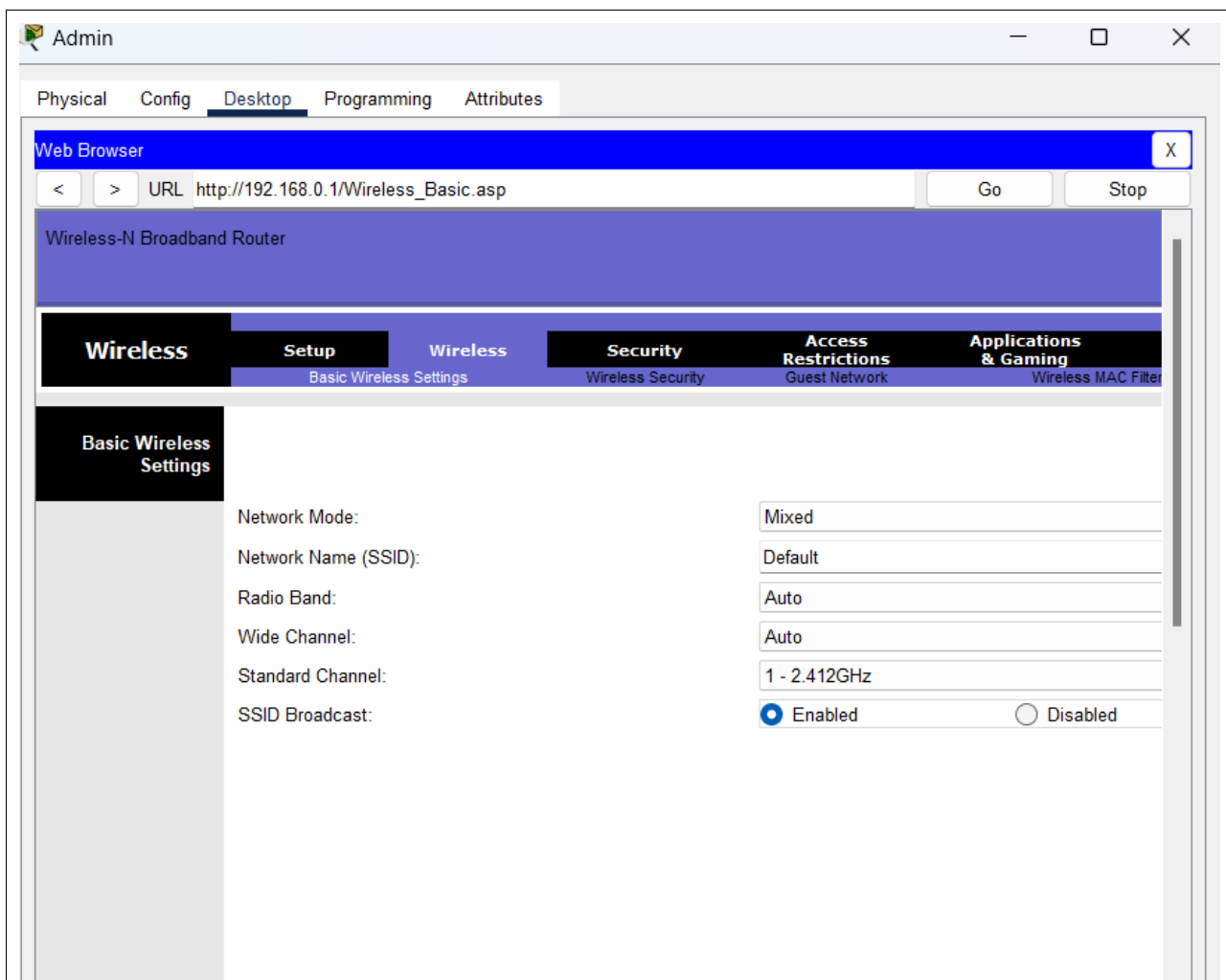
## Laptop 4:

The screenshot shows a window titled 'Laptop4' with a standard Windows-style title bar. Inside, there are four tabs: 'Physical', 'Config', 'Desktop' (which is active), and 'Programming'. Below the tabs, there's a section titled 'IP Configuration' with a blue header bar and a close button (X). Under this section, the 'Interface' dropdown is set to 'Wireless0'. The 'IP Configuration' area has two radio buttons: 'DHCP' (selected) and 'Static'. To the right of these, it says 'DHCP request successful.' Below this, there are four text input fields: 'IPv4 Address' (192.168.0.100), 'Subnet Mask' (255.255.255.0), 'Default Gateway' (192.168.0.1), and 'DNS Server' (0.0.0.0). The 'IPv6 Configuration' section is below, with 'Automatic' (selected) and 'Static' radio buttons. To the right, it says 'Ipv6 request failed.' Below this, there are four text input fields: 'IPv6 Address' (empty), 'Link Local Address' (FE80::2E0:F9FF:FE18:D365), 'Default Gateway' (empty), and 'DNS Server' (empty).

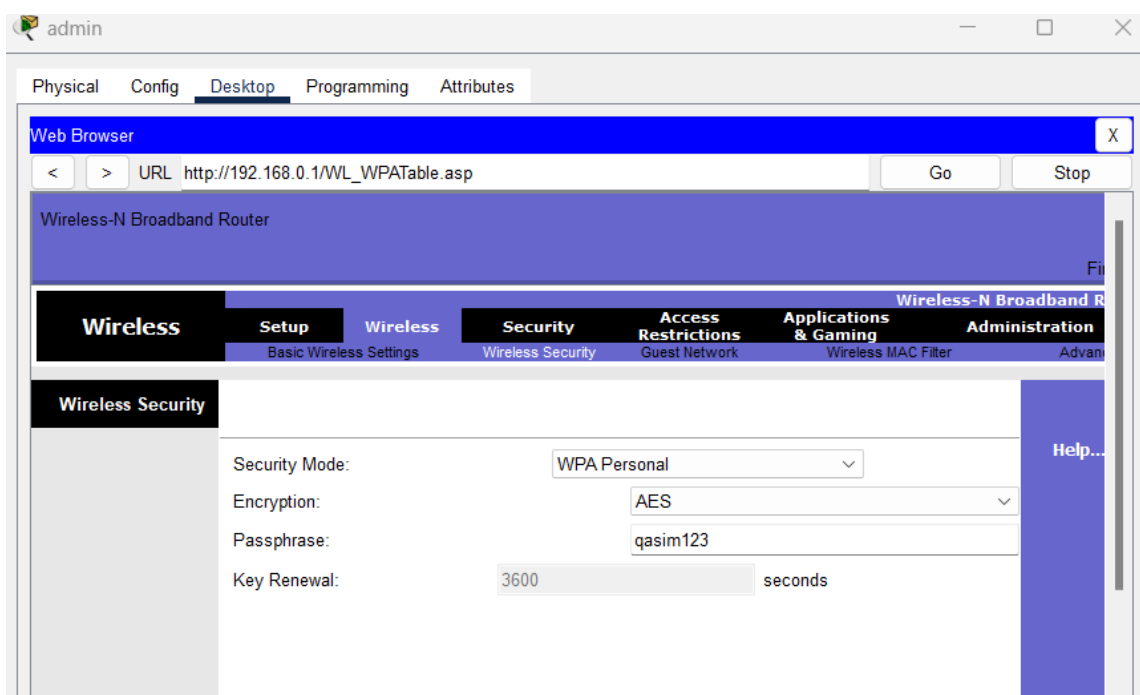
Check the network they are work:

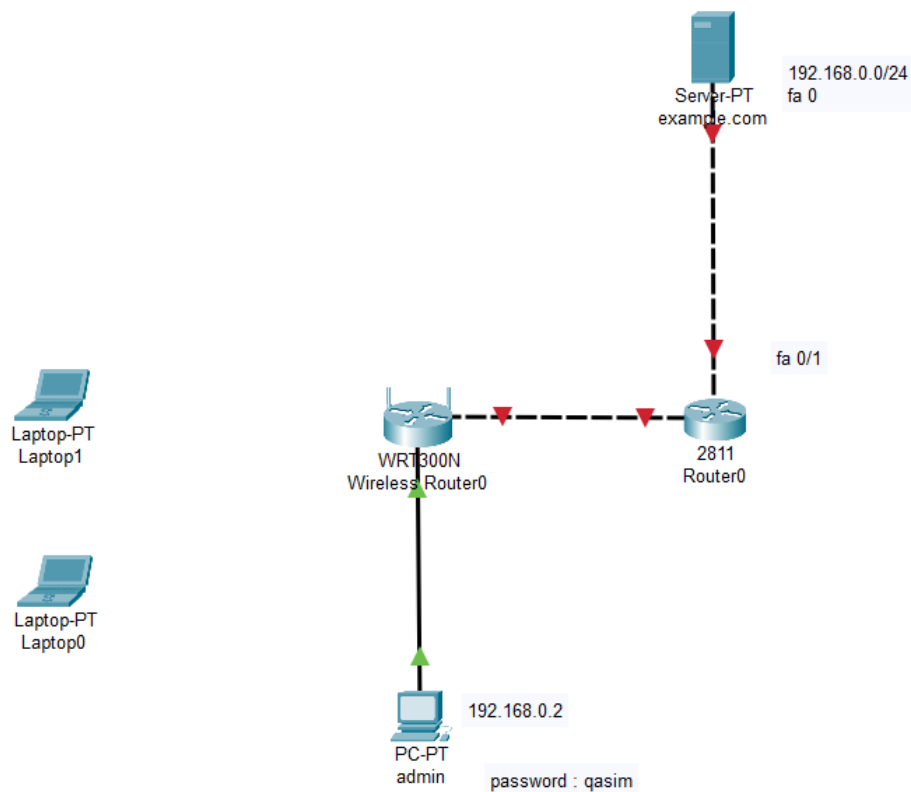
The network are working

id	Last Status	Source	Destination	Type	Color	Time(sec)	Periodic	Num	Edit	Delete
1	Successful	Laptop4	Laptop6	ICMP		0.000	N	0	(edit)	(delete)
2	Successful	Laptop6	Admin	ICMP		0.000	N	1	(edit)	(delete)
3	Successful	Laptop4	Admin	ICMP		0.000	N	2	(edit)	(delete)

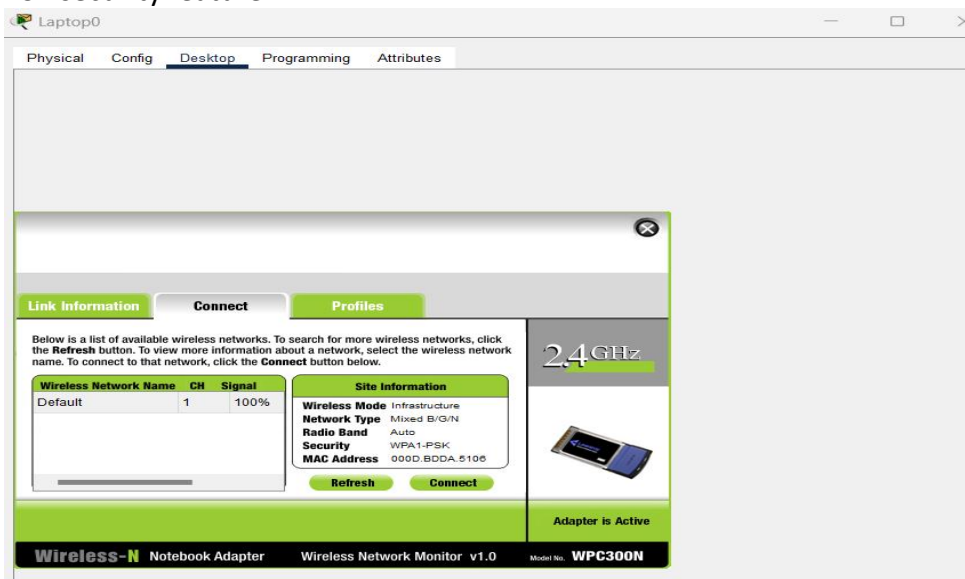


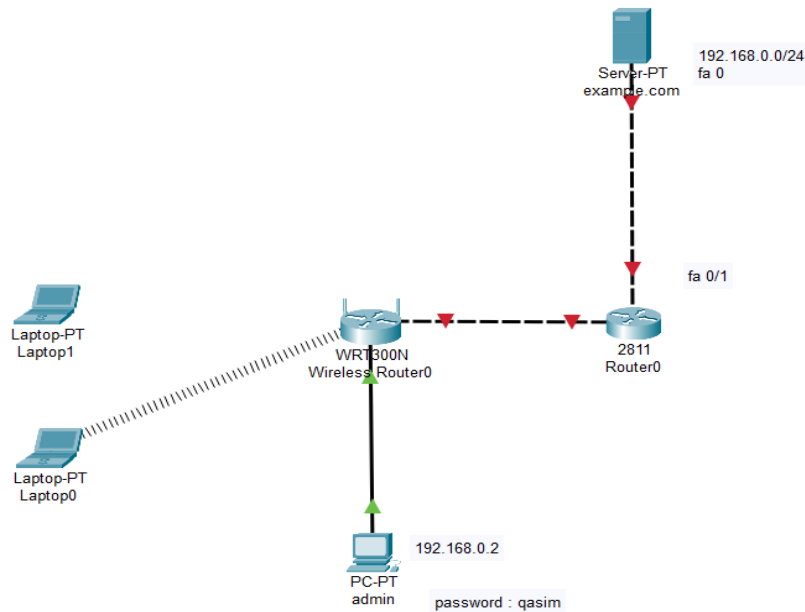
Give



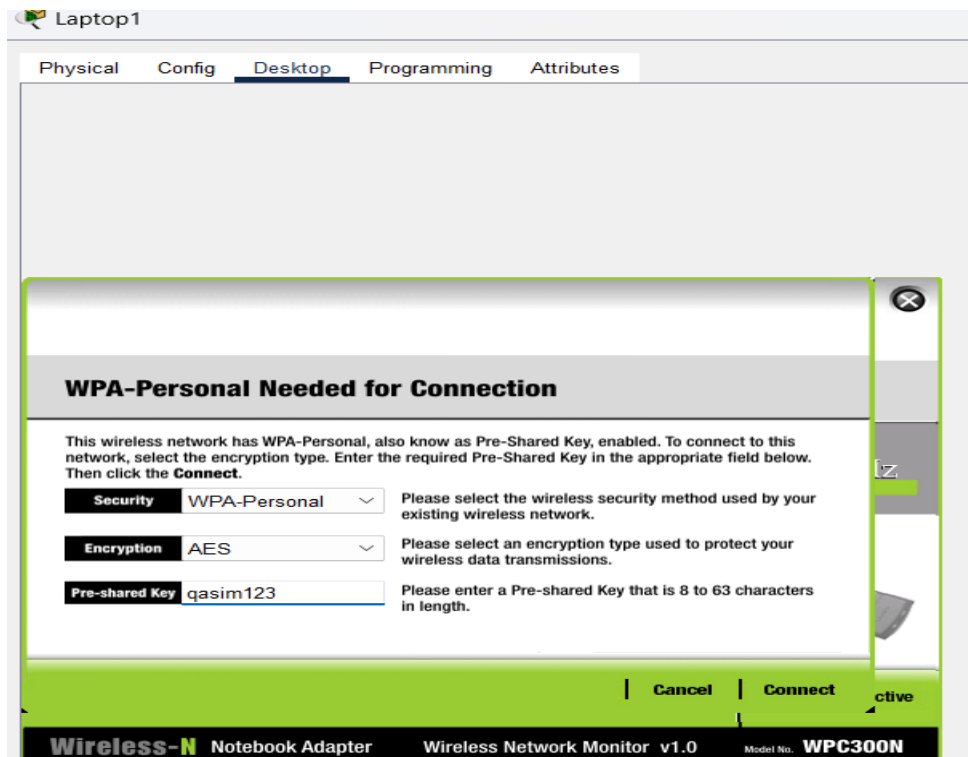


A new window appears that shows the now secured wireless network. Click connect. You can now see the name of the wireless network( myWIFI , in my case) and its signal strength. Site features listed include WPA1 PSK security feature.

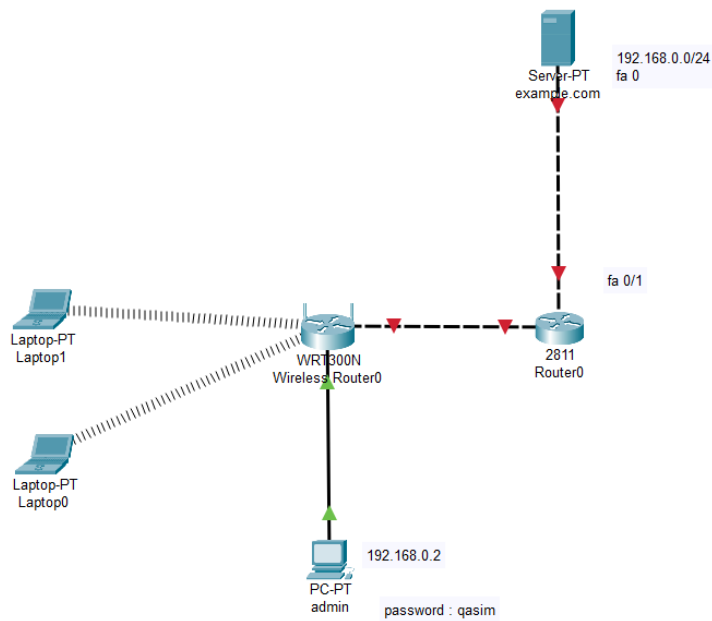




Now, you can change the wireless security mode to any other from the available options. You may choose WEP security feature for our wireless network, for example. For WEP, provide a 40-bit (10 hexadecimal digits e.g. A123B456C789) or 64 -bit key(16 hex characters). WEP and WPA configurations look almost alike.



The laptop connects again in wire router



Wireless Router0

Physical Config **GUI** Attributes

Basic Setup DDNS DHCP Address List

**Internet Setup**

Internet Connection type: Static IP

Internet IP Address: 155 . 21 . 21 . 2

Subnet Mask: 255 . 255 . 0 . 0

Default Gateway: 155 . 21 . 21 . 1

DNS 1: 0 . 0 . 0 . 0

DNS 2 (Optional): 0 . 0 . 0 . 0

DNS 3 (Optional): 0 . 0 . 0 . 0

Optional Settings (required by some internet service providers)

Host Name:

Domain Name:

MTU: Size: 1500

**Network Setup**

ISP :

ISP

Physical **Config** CLI Attributes

**GLOBAL**

- Settings
- Algorithm Settings
- ROUTING**
- Static
- RIP
- SWITCHING**
- VLAN Database
- INTERFACE**
- FastEthernet0/0
- FastEthernet0/1

**FastEthernet0/0**

Port Status ☒ On

Bandwidth ☒ 100 Mbps ☐ 10 Mbps ☒ Auto

Duplex ☐ Half Duplex ☒ Full Duplex ☒ Auto

MAC Address 0000.0C38.9B01

IP Configuration

IPv4 Address 155.21.21.1

Subnet Mask 255.255.0.0

Tx Ring Limit 10

ISP

Physical **Config** CLI Attributes

**GLOBAL**

- Settings
- Algorithm Settings
- ROUTING**
- Static
- RIP
- SWITCHING**
- VLAN Database
- INTERFACE**
- FastEthernet0/0
- FastEthernet0/1**

**FastEthernet0/1**

Port Status ☒ On

Bandwidth ☒ 100 Mbps ☐ 10 Mbps ☒ Auto

Duplex ☐ Half Duplex ☒ Full Duplex ☒ Auto

MAC Address 0000.0C38.9B02

IP Configuration

IPv4 Address 200.0.0.1

Subnet Mask 255.255.255.0

Tx Ring Limit 10

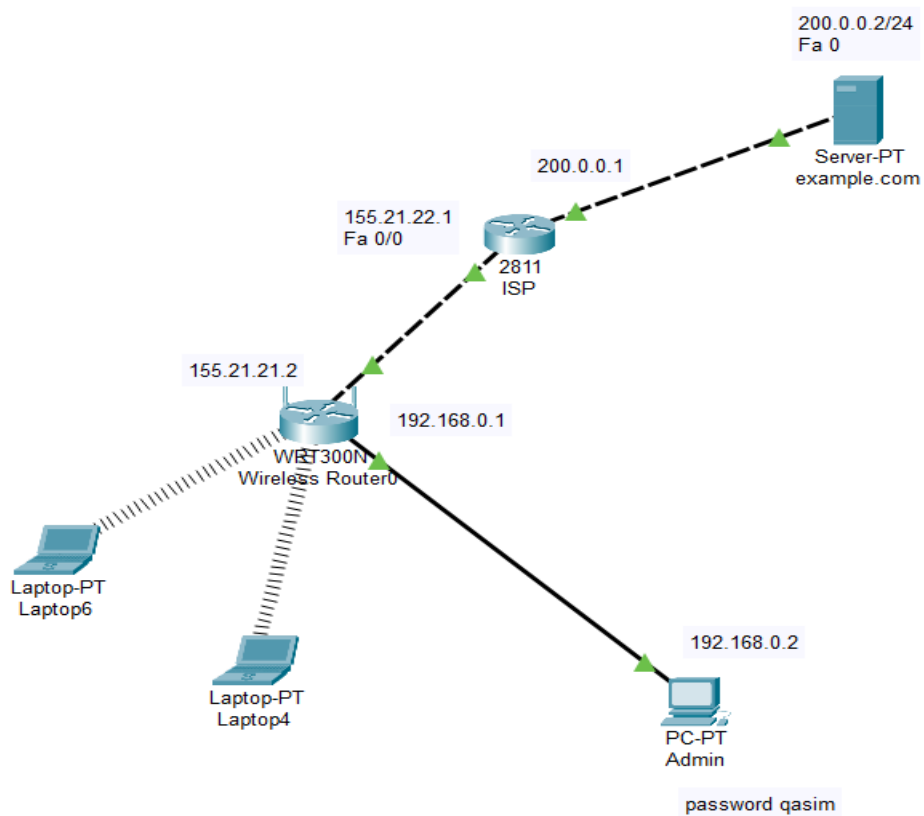
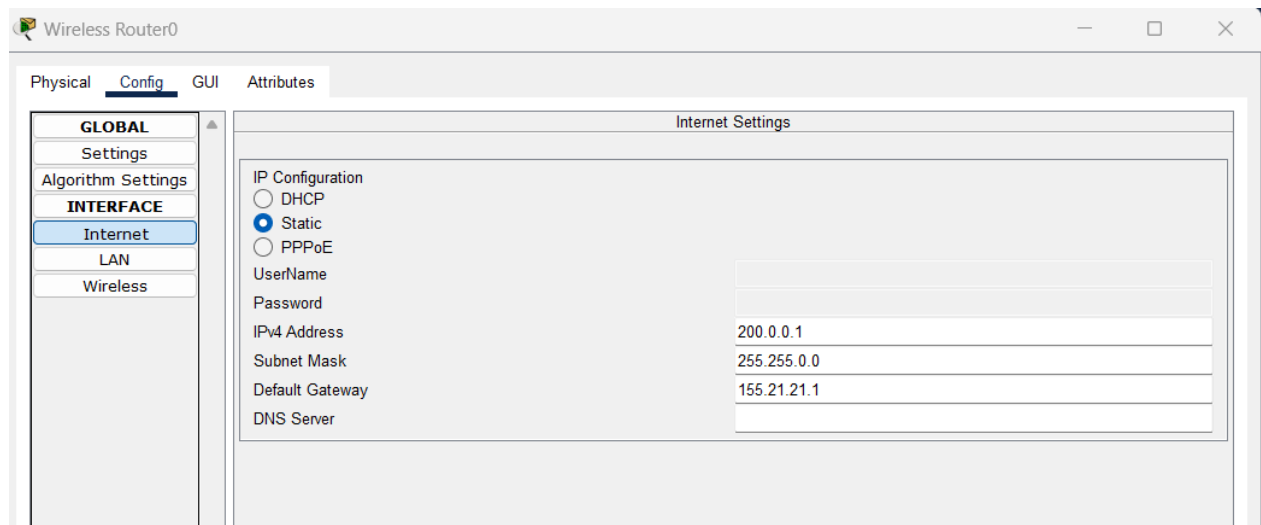
Isp CLI mode run the command: ISP\_ROUTER(config)#ip route 192.168.0.0 255.255.255.0









155.21.21.2

```
Router(config-if)#  
Router(config-if)#  
Router(config-if)#  
Router(config-if)#  
Router(config-if)#  
Router(config-if)#ip route 192.168.0.0 255.255.255.0 155.21.21.2  
Router(config)#  
Router(config)#  
Router(config)#
```

The is done and connect :

Now make the internet interface a DHCP client by enabling DHCP on it.



PDU List Window										
Fire	Last Status	Source	Destination	Type	Color	Time(sec)	Periodic	Num	Edit	Delete
	Successful	Laptop6	Laptop4	ICMP		0.000	N	0	(edit)	(delete)
	Successful	Laptop6	Admin	ICMP		0.000	N	1	(edit)	(delete)
	Successful	Laptop4	Admin	ICMP		0.000	N	2	(edit)	(delete)
	Successful	Laptop6	Laptop4	ICMP		0.000	N	3	(edit)	(delete)

The out in laptop 0 is :

Laptop0

Physical
Config
Desktop
Programming
Attributes

Web Browser
X
<
>
URL http://200.0.0.1
Go
Stop

Wireless-N Broadband Router

Setup
Setup
Wireless
Security
Access Restrictions
Applications & Gaming
Administration
Basic Setup
DDNS
MAC Address Clone

Internet Setup

Internet Connection type
Static IP

Internet IP Address: 200 . 0 . 0 . 1
Subnet Mask: 255 . 255 . 0 . 0
Default Gateway: 155 . 21 . 21 . 1
DNS 1: 0 . 0 . 0 . 0
DNS 2 (Optional): 0 . 0 . 0 . 0
DNS 3 (Optional): 0 . 0 . 0 . 0

Optional Settings (required by some internet service providers)
Host Name:
Domain Name:
MTU: Size: 1500

Network Setup

Router IP
IP Address: 192 . 168 . 0 . 1
Subnet Mask: 255.255.255.0



For example, you can ping the server from Laptop1. Ping should succeed.

```
C:\>ping 200.0.0.1

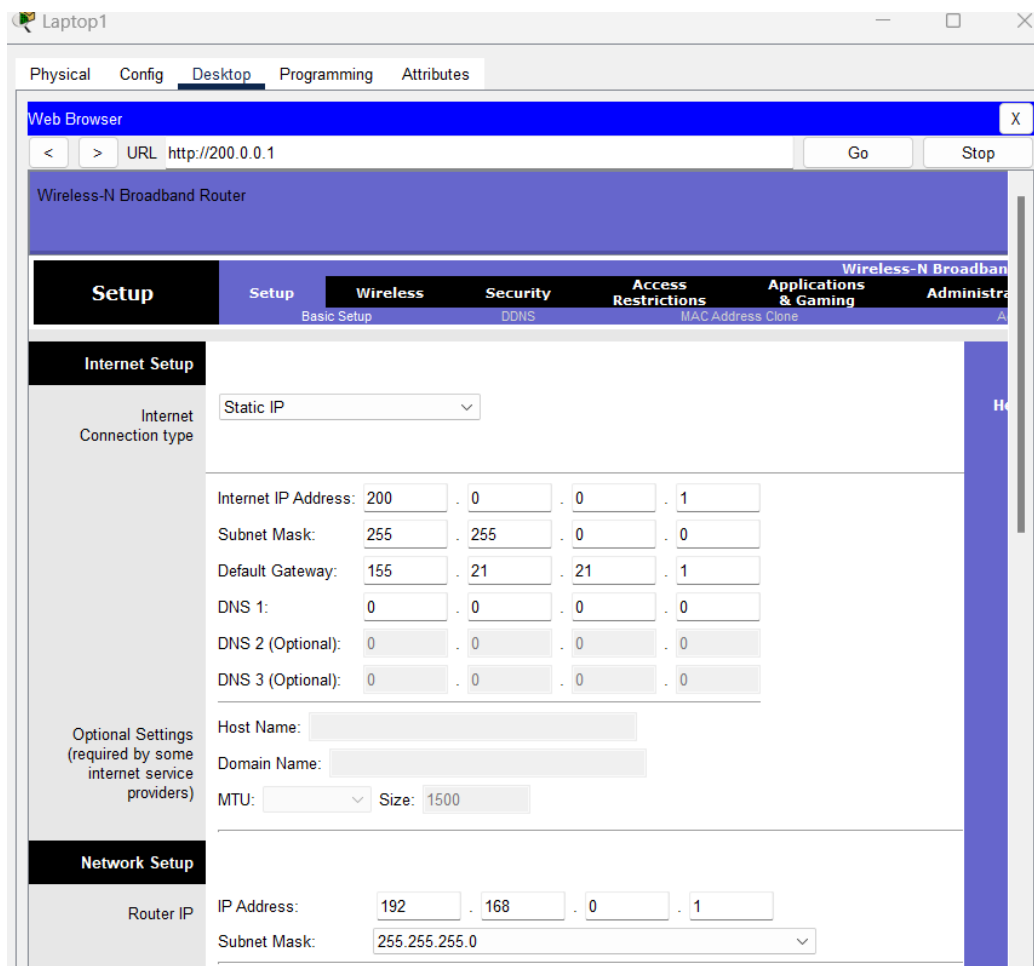
Pinging 200.0.0.1 with 32 bytes of data:

Reply from 200.0.0.1: bytes=32 time=22ms TTL=255
Reply from 200.0.0.1: bytes=32 time=21ms TTL=255
Reply from 200.0.0.1: bytes=32 time=20ms TTL=255
Reply from 200.0.0.1: bytes=32 time=14ms TTL=255

Ping statistics for 200.0.0.1:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 14ms, Maximum = 22ms, Average = 19ms

C:\>
```

The laptop 1 :



Ping the laptop 1 check :

For example, you can ping the server from Laptop1. Ping should succeed.

## Command Prompt

```
Cisco Packet Tracer PC Command Line 1.0
C:\>
ping 200.0.0.1

Pinging 200.0.0.1 with 32 bytes of data:

Reply from 200.0.0.1: bytes=32 time=25ms TTL=255
Reply from 200.0.0.1: bytes=32 time=19ms TTL=255
Reply from 200.0.0.1: bytes=32 time=11ms TTL=255
Reply from 200.0.0.1: bytes=32 time=11ms TTL=255

Ping statistics for 200.0.0.1:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 11ms, Maximum = 25ms, Average = 16ms

C:\>
```